Materials for advancement of MXER tether design

PI: Bob Mojazza/Triton Systems, Inc.-Chelmsford, MA
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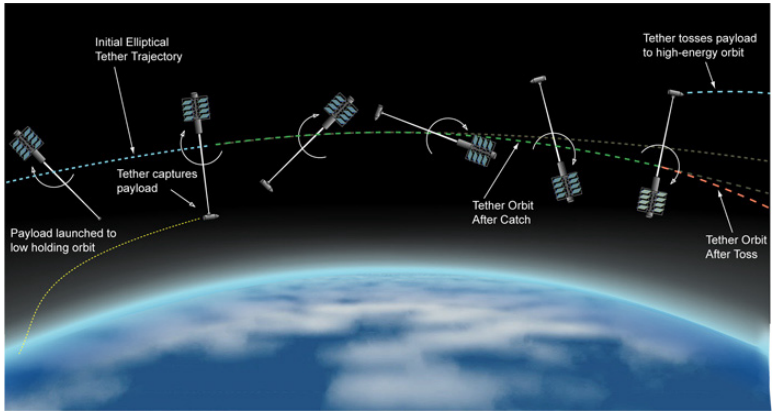
Identification and Significance of Innovation

The materials will be lightweight, flexible, space durable and can be used on various tether geometry. The materials will allow the development of MXER tethers within a reasonable expectation to progress to hardware prototypes.



Schematic of MXER tether (Courtesy of TUI)

Technical Objectives

To develop, identify, and classify various materials that can be used in the fabrication of electrodynamic & MXER tethers for various applications.

Work Plan

Task Name	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Task 1. Metallized high performance synthetic fibers						
Task 2. Metallic non-polymeric fibers						
Task 3. Metal coated substrates						
Task 4. Conductive polymers						
Task 5. Conductive polymer & space durable polymer blends						
Task 6. Program Management and Reporting						
6.1 Kick-off Meeting						
6.2 Report 1						
6.3 Report 2						
6.4 Phase I Final Report						

NASA Applications

Electrodynamic and MXER tethers and in-situ health monitoring of composites

Non-NASA Applications

Applications include electrical shielding, communication, power transmission, electronics

Contacts

Contracts Department (978) 250-4200
Principal Investigator – Bob Mojazza
Telephone (978) 250-4200 ext. 148